

IN THE CLAIMS:

buba' 1. A system for receiving broadcast satellite transmissions in one of an air-based, a land-based, and a sea-based vehicle, said system comprising:

an orientation system for determining at least a first orientation of the vehicle in
5 three dimensions;

a controller in communication with said orientation system, said controller
adapted to receive first orientation data corresponding to said first orientation of the
vehicle and to receive first location data corresponding to the vehicle, wherein said
controller utilizes said first orientation data and said first location data to determine first
10 position control data;

an electronically-pointable antenna adapted to receive said first position control
data from said controller, wherein said electronically-pointable antenna is pointable in
accordance with said first position control data to receive a first direct broadcast satellite
signal; and

15 a direct broadcast satellite receiver adapted to process a first radio frequency
signal corresponding to said first direct broadcast satellite signal received by said
electronically-pointable antenna to produce at least one of the first audio output, a first
video output, and a first data output.

2. A system as claimed in Claim 1, wherein said electronically-pointable
20 antenna comprises a one-dimensionally electronically-pointable antenna, said system
further comprising:

a turntable system upon which said one-dimensionally electronically-pointable
antenna is mountable to provide two-dimensional pointing.

3. A system, as claimed in Claim 2, wherein said controller comprises a feedback loop for controlling a rotational orientation of said one-dimensionally electronically-pointable antenna on said turntable.

4. A system, as claimed in Claim 1, wherein said electronically-pointable antenna comprises one of a phased array antenna and a plasma grating antenna.

5. A system, as claimed in Claim 1, wherein said electronically-pointable antenna is adapted to electronically point in a first and a second dimension.

6. A direct broadcast satellite system, as claimed in Claim 1, wherein said orientation system comprises a first electronic compass and tilt-sensor.

10 7. A direct broadcast satellite system, as claimed in Claim 1, wherein said orientation system comprises a first solid-state electromagnetic field sensor and a first fluid-field tilt-sensor adapted to provide said first orientation data of the vehicle.

8. A direct broadcast satellite system, as claimed in Claim 1, wherein said controller comprises an open-loop control system adapted to process said first location data, said first location data received from a Global Positioning System receiver in communication with said controller, said first orientation data from said controller, and position and signal characteristic data corresponding to a first satellite to determine said first position control data comprising at least a first coarse look-angle position data to point said electronically-pointable antenna in first and second dimensions at said first satellite.

20 9. A direct broadcast satellite system, as claimed in Claim 8, said system further comprising a signal lock detector for at least detecting a first loss of said first direct broadcast satellite signal.

10. A direct broadcast satellite system, as claimed in Claim 9, wherein said controller further comprises a closed-loop feedback circuit adapted for controlling steering of said electronically-pointable antenna.

11. A direct broadcast satellite system for receiving in a mobile craft a first signal from a first direct broadcast satellite, said system comprising:

an orientation system for determining at least a first orientation of the mobile craft in three dimensions;

5 a processor, in communication with said orientation system, for determining first position control data from at least first orientation data corresponding to said first orientation of the mobile craft and from first location data of the mobile craft; and

10 an electronically-pointable antenna, in communication with said processor, adapted to be pointed in accordance with said first position control data, wherein the first signal from the first direct broadcast satellite is receivable by said electronically-pointable antenna.

12. A direct broadcast satellite system as claimed in Claim 13, wherein said processor is adapted to receive a first input from a user, said first input corresponding to selection of the first direct broadcast satellite.

15 13. A direct broadcast satellite system as claimed in Claim 13, wherein said orientation system is adapted to determine a first true north orientation of the mobile craft from first magnetic north data, wherein said first true north orientation is used in determining said first orientation of said mobile craft.

14. A direct broadcast satellite system as claimed in Claim 13, wherein said processor includes a first memory for storing at least a first orbit position of the first direct broadcast satellite, wherein said first orbit position is used by said processor to determine said first position control data.

15. A direct broadcast satellite system as claimed in Claim 13, further comprising a Global Positioning System receiver in communication with said processor for receiving at least first location information of the mobile craft, wherein said processor uses said first location information to determine said first position control data.

5 16. A direct broadcast satellite system as claimed in Claim 13, further comprising a direct broadcast receiver for processing a first radio frequency signal corresponding to said first direct broadcast satellite signal received by said electronically-pointable antenna to produce at least one of the first audio output, a first video output, and a first data output.

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